

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070014
Proposed Permit Number: 2814-V1**

I. APPLICANT

Company:

Union Carbide Corp - St Charles Operations
PO Box 50
Hahnville, Louisiana 70057-0050

Facility:

Union Carbide Corp. (UCC)
St. Charles Operations, MGE Plant
355 Hwy 3142 Gate 28
Taft, St. Charles Parish, Louisiana

Approximately 2 miles west of Hahnville, on the west bank of the Mississippi River, off LA Highway 3142 at corner of LA Hwy 18. Approximate UTM coordinates are 746.184 km East and 3,319.222 km North, Zone 15.

II. FACILITY AND CURRENT PERMIT STATUS

Union Carbide Corporation, a subsidiary of the Dow Chemical Company, owns and operates a chemical manufacturing facility in St. Charles Parish near Taft. The St. Charles Operations (SCO) facility is an integrated petrochemical manufacturing complex, converting petroleum-based raw materials into a variety of basic building block, intermediate chemicals and plastics. The products from this facility eventually wind-up in thousands of everyday household, business, and consumer products. The facility as a whole started operation before 1969.

Ethylene oxide, methanol and glycol ethers are reacted together at the Methyl Glycol Ethers (MGE) Plant to produce glycol ether products of varying molecular weights. Production rates of the products are dependent upon the amount of each product that is returned to the reactor and the ethylene oxide feed.

The unused methanol in the reaction is recovered in a distillation column and reused in the process. There are three other distillation columns used to separate the glycol ether products. The three distillation columns utilize a vacuum jet system to operate below atmospheric pressure.

Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070014
Proposed Permit Number: 2814-V1

Union Carbide Corp - St Charles Operations is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within the complex. These include:

Permit No.	Unit or Source	Date Issued
1909-V1	Higher Glycols Plant	6/18/2007
513-V2	Acrylics I	6/15/2007
1912-V0	Specialty Products Unit	3/12/2003*
2350-V3	LP-3 Unit	12/30/2003
2858-V0	PXC Unit	7/8/2004
2422-V1	Olefins I & II	9/30/2004
2343-V0	Energy Systems	6/27/2005
2421-V0	Amines Plants	11/10/2005
2104-V1	Environmental Protection Dept. (EPD)	2/16/2006
2656-V0	Olefins Distribution/Site Logistics Units	3/13/2006
2214-V0	LP-6	3/27/2006
2446-V1	Unit 8 (EXP)	7/3/2007
373-V1	Oxide II	7/5/2007
477-V0	Unit 5 (Amines I)	6/08/2006
2254-V0	Acrylics 2	7/20/2007
2876-V1	Unit 9	8/10/2006
476-V1	Oxide I	1/30/2007
2257-V4	TB1 and TB2 Units	10/9/2007

* Timely renewal submitted.

Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070014
Proposed Permit Number: 2814-V1

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application was submitted on April 24, 2007 requesting a Part 70 operating permit for the MGE Plant. Additional information dated October 3, 2007 was submitted as well.

Project

This is the renewal permit application. No physical modifications or changes in the method of operation have occurred since the initial permit was issued. The emission estimating methodology was updated to represent current knowledge of raw material and product speciation and operating conditions. A summary of the proposed changes are as follows:

- MK4-H217 Vent (EPN 40) – Description change.
- Tank 3366 Vent (EPN 42) –For operational flexibility, the throughput was increased from 366,859 gal/yr to 636,132 gal/yr. This reconciliation is based on current knowledge of existing operations and service of the tank.
- Tank3373 Vent (EPN 46D)- Description change.
- The Notification of Case-By-Case Insignificant Activity dated September 26, 2003 has been incorporated into this application.

Proposed Permit

Permit 2814-V1 will be the renewal Part 70 operating permit for the MGE Plant.

Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070014
Proposed Permit Number: 2814-V1

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM ₁₀	-	-	-
SO ₂	-	-	-
NO _x	-	-	-
CO	-	-	-
VOC	5.42	5.47*	+0.05

* Includes 4.32 TPY of LAC 33:III Chapter 51 Toxic Air Pollutants.

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

For the applicability and exemptions of selected subject items at the unit, refer to Section X - Table 1. Applicable Louisiana and Federal Air Quality Requirements, and Section XI -Table 2. Explanation for Exemption Status or Non-Applicability of a Source, of the proposed permit.

Prevention of Significant Deterioration/Nonattainment Review

PSD review is not required with this renewal.

Streamlined Equipment Leak Monitoring Program

It is required that the MGE Plant comply with a streamlined equipment leak monitoring program. Compliance with the streamlined program shall serve to comply with each of the fugitive emission monitoring programs being streamlined.

For the MGE Plant, fugitive emissions are subject to the requirements of 40 CFR 63 Subpart H, 40 CFR 63 Subpart EEEE (referencing 40 CFR 63 Subpart H), and LAC 33:III.2121. Among these regulations, 40 CFR 63 Subpart H is the overall most stringent program. Therefore, fugitive emissions shall be monitored as required by this program (40 CFR 63 Subpart H).

Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070014
Proposed Permit Number: 2814-V1

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
Methyl Glycol Ethers (MGE) Plant	40 CFR 63 Subpart H – HON	≥ 5% VOHAP	40 CFR 63 Subpart H – HON
	40 CFR Part 63 Subpart H (per 40 CFR 63.2346(c) Subpart EEEE)	≥ 5% VOHAP	
	LAC 33:III.2121 –	≥ 10% VOC	

MACT Requirements

The applicable MACT requirements for the different sources are described in the Specific Requirements section of the proposed permit.

Air Quality Analysis

None.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

No permit shield requested.

VI. PERIODIC MONITORING

Fugitives, FUG18, from pumps, agitators, connectors, and compressors will be periodically monitored as per 40 CFR 63 Subpart H.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070014
Proposed Permit Number: 2814-V1

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H₂S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO_x) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀ – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070014
Proposed Permit Number: 2814-V1

Sulfur Dioxide (SO₂) – An oxide of sulfur.

Sulfuric Acid (H₂SO₄) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.